

1. (currently amended) A tissue connector assembly comprising a surgical fastener comprising two clips, each sized and shaped to attach tissues and hold the tissues together therein, and a bridge portion connecting said two clips and spacing said clips from one another.
2. (previously presented) The tissue connector assembly of claim 1, wherein said bridge portion is substantially straight.
3. (previously presented) The tissue connector assembly of claim 2, wherein said two clips have an open configuration and a closed configuration.
4. (previously presented) The tissue connector assembly of claim 3, wherein said bridge portion provides a predetermined spacing between said clips in said closed configuration.
5. (previously presented) The tissue connector assembly of claim 3, wherein at least one of said two clips is a self-closing clip.
6. (previously presented) The tissue connector assembly of claim 5, wherein said self-closing clip comprises [[includes a]] shape memory material.
7. (previously presented) The tissue connector assembly of claim 5, further comprising a coil surrounding a substantial length of said self-closing clip.
8. (previously presented) The tissue connector assembly of claim 5, wherein said closed configuration is an unbiased configuration.

9. (previously presented) The tissue connector assembly of claim 5, wherein said closed configuration is a loop.

10. (previously presented) The tissue connector assembly of claim 5, wherein said open configuration is a biased configuration, and further comprising a release mechanism having a first position to bias said self-closing clip in said open configuration.

11. (previously presented) The tissue connector assembly of claim 10, wherein said closed configuration is an unbiased configuration, and wherein said release mechanism has a second position to unbias said self-closing clip into said closed configuration.

12. (previously presented) The tissue connector assembly of claim 11, further comprising a coil surrounding a substantial length of said self-closing clip, where said coil is coupled at one point on said self-closing clip and releasably coupled via said release mechanism at a second point on said self-closing clip.

13. (previously presented) The surgical fastener of claim 12, wherein said first position provides for compressing said coil between said first point and second point to form said biased configuration.

14. (previously presented) The tissue connector assembly of claim 13, wherein said second position provides for releasably uncoupling said coil from said second point to form said unbiased configuration.

15. (previously presented) The tissue connector assembly of claim 5, wherein said surgical fastener has two ends including a first end and a second end, and further comprising two tissue piercing members including a first tissue piercing member releasably coupled to the first end and a second tissue piercing member releasably coupled to said second end.

16. (previously presented) The tissue connector assembly of claim 15, further comprising a release mechanism, and wherein said release mechanism activates said release of said two piercing members from said respective two ends.

17. (previously presented) The tissue connector assembly of claim 16, wherein said release mechanism activates the closing of said self-closing clip.

18. (currently amended) The tissue connector assembly of claim 15, further comprising two sutures, wherein said coupling of said first tissue piercing member to said first end includes one of said sutures, [[suture]] and wherein said coupling of said second tissue piercing member to said second end includes the other of said sutures [[suture]].

19. (previously presented) The tissue connector assembly of claim 18, wherein said suture of said first coupling and said suture of said second coupling are between about 10 mm and about 300 mm in length.

20. (currently amended) A tissue connector assembly comprising:

a surgical fastener comprising two clips sized and shaped to attach tissues and hold the tissues therein including at least one self-closing clip having an open configuration and a closed configuration, where said open configuration is a biased configuration and said closed configuration is an unbiased configuration, and a bridge portion having a substantially straight portion connecting said two clips; and

a release mechanism having a first position to bias said self-closing clip in said open configuration, and a second position to unbias said self-closing clip into said closed configuration.

21. (previously presented) The tissue connector assembly of claim 20, further comprising a coil surrounding a substantial length of said self-closing clip, where said coil is coupled at one point

on said self-closing clip and releasably coupled via said release mechanism at a second point on said self-closing clip.

22. (previously presented) The surgical fastener of claim 21, wherein said first position provides for compressing said coil between said first point and second point to form said biased configuration.

23. (previously presented) The tissue connector assembly of claim 22, wherein said second position provides for releasably uncoupling said coil from said second point to form said unbiased configuration.

24. (previously presented) A tissue connector assembly comprising:

a surgical fastener having two ends including a first end and a second end and including two clips sized and shaped to attach tissues including at least one self-closing clip, and a substantially straight bridge portion connecting said two clips; and

two tissue piercing members including a first tissue piercing member releasably coupled to the first end and a second tissue piercing member releasably coupled to said second end.

25. (previously presented) The tissue connector assembly of claim 24, further comprising a release mechanism, and wherein said release mechanism activates said release of said two piercing members from said respective two ends.

26. (previously presented) The tissue connector assembly of claim 25, wherein said release mechanism activates the closing of said self-closing clip.

Claims 27-30. (cancelled)

31. (previously presented) Surgical clip apparatus sized and shaped to attach tissues comprising an elongated member, a pair of coils surrounding at least a portion of said

elongated member, said pair of coils being serially arranged and spaced from one another along said elongated member, said elongated member being shape memory material and having an unbiased shape, which includes a plurality of loops, and a biased shape, said elongated member tending to move toward said unbiased shape from said biased shape.

32. (previously presented) The apparatus of claim 31 wherein said loops are spaced from one another.

33. (previously presented) The apparatus of claim 32 wherein each coil surrounds at least a portion of a different one of said loops.

34. (previously presented) The apparatus of claim 31 wherein each coil has an outer end and an inner end, said inner ends being spaced from one another.

35. (previously presented) The apparatus of claim 32 wherein each coil has an outer end and an inner end, and said elongated member has two enlarged end portions, further including a restraint coupled to said elongated member adjacent to each of said inner ends.

36. (currently amended) Tissue connector apparatus comprising a surgical clip sized and shaped to attach tissues, first and second tissue piercing members each having first and second end portions, first and second couplings, and first and second flexible members, said surgical clip having first and second end portions, said first coupling being coupled to said first end portion of said surgical clip and said second coupling being coupled to said second end portion of said surgical clip, said first flexible member having a first end portion coupled to said first coupling and a second end portion secured to said second end portion of said first tissue piercing member, said second flexible member having a first end portion coupled to said second coupling and a second end portion secured to said

second end portion of said second tissue piercing member, said surgical clip comprising an elongated member, a pair of coils surrounding at least a portion of said elongated member, said pair of coils being serially arranged and spaced from one another along said elongated member, said elongated member being shape memory [[member]] material and having an unbiased shape, which includes a plurality of loops, and a biased shape, said elongated member tending to move toward said unbiased shape from said biased shape.

37. (previously presented) The tissue connector apparatus of claim 36 wherein said first coupling releasably couples said first end portion of said surgical clip to said first needle.

38. (previously presented) The tissue connector apparatus of claim 37 wherein said second coupling releasably couples said second end portion of said surgical clip to said second needle.

39. (new) The tissue connector assembly of claim 1 wherein each of said clips has a memory set loop configuration and a deformed configuration, and said bridge portion separates said loops from one another when said clips are in their memory set configuration.

40. (new) The tissue connector assembly of claim 1 wherein each of said clips has a free end.

41. (new) Tissue connector apparatus comprising an elongated member having a first loop shaped portion adapted to hold tissue therein, a second loop shaped portion adapted to hold tissue therein, and a bridge portion bridging said first and second loop shaped portions, each loop shaped portion having a free end and being deformable into a second deformed shape where it tends to return towards its loop shape.

42. (new) The tissue connector apparatus of claim 41 wherein said elongated members are not coils.
43. (new) The tissue connector apparatus of claim 41 wherein said elongated member is a wire.
44. (new) The tissue connector apparatus of claim 43 wherein said wire comprises nitinol.
45. (new) The tissue connector apparatus of claim 41 further including a pair of coils, one of said coils surrounding at least a portion of one of said first loop shaped portion and the other of said coils surrounding at least a portion of said second loop shaped portion.
46. (new) The tissue connector apparatus of claim 45 wherein each coil has an outer end and an inner end, and said elongated member has two enlarged end portions, further including a restraint coupled to said elongated member adjacent to each of said inner ends.
47. (new) The tissue connector apparatus of claim 41 wherein said bridge portion is substantially straight.
48. (new) Tissue connector apparatus comprising an elongated member having a first loop shaped portion, a second loop shaped portion and a bridge portion bridging said first and second loop shaped portions, each loop shaped portion having a piercing element at one end and a portion that merges into said bridge shaped portion, each loop shaped portion being deformable into a second deformed shape and having the property of tending to return towards its loop shape.

49. (new) The tissue connector apparatus of claim 48 wherein said elongated members are not coils.

50. (new) The tissue connector apparatus of claim 49 wherein said elongated member is a wire.

51. (new) The tissue connector apparatus of claim 50 wherein said wire comprises nitinol.

52. (new) The tissue connector apparatus of claim 48 further including a pair of coils, one of said coils surrounding at least a portion of one of said first loop shaped portion and the other of said coils surrounding at least a portion of said second loop shaped portion.

53. (new) The tissue connector apparatus of claim 52 wherein each coil has an outer end and an inner end, and said elongated member has two enlarged end portions, further including a restraint coupled to said elongated member adjacent to each of said inner ends.

54. (new) The tissue connector apparatus of claim 48 wherein said bridge portion is substantially straight.

55. (new) Tissue connector apparatus comprising a surgical fastener comprising two clips and a bridge portion connecting said two clips, each clip having a piercing element at one end thereof.

Listing of Claims:

1. (Original) A tissue connector assembly comprising a surgical fastener, which is adapted to assume a loop configuration, a first tissue piercing member and a second tissue piercing member, said surgical fastener having a first end portion and a second end portion, said first tissue piercing member being coupled to said first end portion and said second tissue piercing member being coupled to said second end portion.
2. (Original) The tissue connector assembly of claim 1 further including a flexible member, said flexible member having a first end portion coupled to said first tissue piercing member and a second end portion coupled to said first end portion of said fastener.
3. (Original) The tissue connector assembly of claim 2 further including a second flexible member, said second flexible member having a first end portion coupled to said second tissue piercing member and a second end portion coupled to said second end portion of said fastener.
4. (Currently amended) The tissue connector assembly of claim 3 wherein at least one of said ~~first flexible member~~ members comprises a suture.
5. (Original) The tissue connector assembly of claim 3 wherein each of said flexible members comprises a suture.
6. (Original) The tissue connector assembly of claim 3 wherein at least one of said flexible members comprises metal.
7. (Currently amended) The tissue connector assembly of claim ~~2~~ 3 wherein each of said flexible ~~member~~ members comprises a ~~suture~~ metal.
8. (Canceled)
9. (Original) The tissue connector assembly of claim 1 wherein at least one of said tissue piercing members comprises a needle.

10. (Original) The tissue connector assembly of claim 1 wherein each of said tissue piercing members comprises a needle.
11. (Original) The tissue connector assembly of claim 1 further including a coupling, said first tissue piercing member and said first end portion of said surgical fastener being coupled to said coupling.
12. (Original) The tissue connector assembly of claim 11 wherein said coupling comprises a tubular member having movable portions and said surgical fastener includes an enlarged portion adapted for receipt in said movable portions.
13. (Original) The tissue connector assembly of claim 12 wherein said enlarged portion is spherical.
14. (Original) The tissue connector assembly of claim 12 wherein said movable portions comprise a plurality of strands.
15. (Currently amended) The tissue connector assembly of claim 14 wherein ~~a~~ the plurality of said strands ~~include~~ includes a notch for receiving a portion of said enlarged portion.
16. (Original) The tissue connector assembly of claim 14 wherein said strands comprise wires.
17. (Original) The tissue connector assembly of claim 14 wherein said strands comprise cables.
18. (Original) The tissue connector assembly of claim 11 including a second coupling, said surgical fastener second end portion and second piercing member being coupled to said second coupling.
19. (Original) The tissue connector assembly of claim 18 wherein said surgical fastener includes an enlarged portion and said second coupling comprises a generally tubular member having movable portions adapted to receive at least a portion of said second portion.
20. (Original) The tissue connector assembly of claim 19 wherein said movable portions comprise a plurality of strands.

21. (Currently amended) The tissue connector assembly of claim 19 wherein ~~a~~ the plurality of said strands ~~include~~ includes a notch for receiving a portion of said enlarged portion.
22. (Original) The tissue connector assembly of claim 18 wherein said second coupling releases the coupling between said second piercing member and said surgical fastener in response to releasing said fastener first end portion coupling.
23. (Original) The tissue connector assembly of claim 18 further including a coil surrounding said surgical fastener and wherein said fastener includes first and second enlarged portions and said fastener first end portion coupling and said second coupling are adapted for receipt of said fastener first and second enlarged portions, respectively, said second coupling including members having portions that have a radially outward bias and extend within said coil when said coil is compressed against said second coupling.
24. (Original) The tissue connector assembly of claim 18 further including a flexible member and a coil, said flexible member having a portion coupled to said second tissue piercing member and a portion coupled to said second coupling, said coil surrounding said surgical fastener and being compressed against said second coupling, said fastener including an enlarged portion and said fastener first end portion coupling being adapted for receipt of said enlarged portion, said second coupling including a first member fixedly secured to said fastener and a second member slidably coupled to said fastener, and said flexible member being compressed between said second coupling members when said coil is compressed against said slidably coupled member.
25. (Original) The tissue connector assembly of claim 18 wherein said fastener includes a groove and projection and said second coupling includes a member having a groove and projection and a sleeve slidably mounted thereon, said fastener groove and projection being configured to mate with said coupling member groove and projection.
26. (Original) The tissue connector assembly of claim 18 further including a flexible member having a portion coupled to said second tissue piercing member and a knotted portion, said second coupling including a tubular member having a bore, said knotted portion being in said bore and said bore having a portion with a diameter less than that of a section of said knotted portion.

27. (Original) The tissue connector assembly of claim 18 wherein said second coupling comprises an annular blade coupled to said second piercing member, said annular blade surrounding and being secured to a portion of said surgical fastener.
28. (Original) The tissue connector assembly of claim 1 wherein said surgical fastener comprises a surgical clip.
29. (Original) The tissue connector assembly of claim 28 wherein said surgical clip comprises a wire.
30. (Original) The tissue connector assembly of claim 29 further including a coil surrounding at least a portion of said wire and having confined ends.
31. (Original) The tissue connector of claim 29 wherein said wire comprises shape memory material.
32. (Original) The tissue connector assembly of claim 28 wherein said surgical clip has an open configuration and a closed configuration.
33. (Original) The tissue connector assembly of claim 32 wherein said surgical clip is in said closed configuration when in a relaxed state.
34. (Original) The tissue connector assembly of claim 32 wherein said surgical clip is generally U-shaped when in said open configuration.
35. (Original) The tissue connector assembly of claim 32 wherein said surgical clip assumes a spiral configuration when in said closed configuration.
36. (Original) A tissue connector assembly comprising a surgical fastener having first and second end portions, a first tissue piercing member, a second tissue piercing member, and at least one flexible member having first and second end portions, said at least one flexible member first end portion being attached to said first tissue piercing member, said at least one flexible member second end portion being coupled to said first end portion of said surgical fastener, said second end portion of said surgical fastener being coupled to said second tissue piercing member.

37. (Original) The tissue connector assembly of claim 36 wherein said at least one flexible member comprises a suture.

38. (Original) The tissue connector assembly of claim 36 wherein said at least one flexible member comprises metal.

39. (Original) The tissue connector assembly of claim 36 further including a coupling, said flexible member and surgical fastener being secured to said coupling.

40. (Original) The tissue connector assembly of claim 39 wherein said coupling and flexible member have outer surfaces, said coupling and flexible member being configured to form a smooth, continuous transition there between along said outer surfaces.

41. (Original) The tissue connector assembly of claim 39 wherein said coupling and flexible member form an interface, at least a portion of each of said coupling and flexible member adjacent to said interface having the same cross-sectional shape and dimension.

42. (Original) The tissue connector assembly of claim 39 wherein said coupling and flexible member have essentially the same cross-sectional shape and dimension.

43. (Original) The tissue connector assembly of claim 39 wherein said surgical fastener is releasably coupled to said coupling.

44. (Original) The tissue connector assembly of claim 39 wherein said surgical fastener includes an enlarged portion and said coupling comprises a tubular member having movable portions adapted to receive at least a portion of said enlarged portion.

45. (Original) The tissue connector assembly of claim 44 wherein said enlarged portion is spherical.

46. (Original) The tissue connector assembly of claim 44 wherein said movable portions comprises a plurality of strands.

47. (Original) The tissue connector assembly of claim 46 wherein a plurality of said strands include a notch for receiving a portion of said enlarged portion.

48. (Original) The tissue connector assembly of claim 46 wherein said strands comprise wires.

49. (Original) The tissue connector assembly of claim 46 wherein said strands comprise cables.

50. (Original) The tissue connector assembly of claim 39 including a second coupling, said surgical fastener second end portion and second piercing member being coupled to said second coupling.

51. (Original) The tissue connector assembly of claim 50 wherein said surgical fastener includes a second enlarged portion and said second coupling comprises a generally tubular member having movable portions adapted to receive at least a portion of said enlarged portion.

52. (Original) The tissue connector assembly of claim 51 wherein said movable portions comprise a plurality of strands.

53. (Original) The tissue connector assembly of claim 51 wherein a plurality of said strands include a notch for receiving a portion of said enlarged portion.

54. (Original) The tissue connector assembly of claim 50 wherein said second coupling releases the coupling between said second piercing member and said surgical fastener in response to releasing said fastener first end portion coupling.

55. (Original) The tissue connector assembly of claim 50 further including a coil surrounding said surgical fastener and wherein said fastener includes first and second enlarged portions and said fastener first end portion coupling and said second coupling are adapted for receipt of said fastener first and second enlarged portions, respectively, said second coupling including members that are biased radially inward with portions extending within said coil when said coil is compressed against said second coupling.

56. (Original) The tissue connector assembly of claim 50 further including a second flexible member and a coil, said second flexible member having a portion coupled to said second tissue piercing member and a portion coupled to said second coupling, said coil surrounding said surgical fastener and being compressed against said second coupling, said fastener including an enlarged portion and said fastener first end portion coupling being adapted for receipt of said enlarged portion, said second coupling including a first member fixedly secured to said fastener

and a second member slidably coupled to said fastener, and said flexible member being compressed between said second coupling members when said coil is compressed against said slidably coupled member.

57. (Original) The tissue connector assembly of claim 50 wherein said fastener includes a groove and projection and said second coupling includes a member having a groove and projection and a sleeve slidably mounted thereon, said fastener groove and projection being configured to mate with said coupling member groove and projection.

58. (Original) The tissue connector assembly of claim 50 further including a second flexible member having a portion coupled to said second tissue piercing member and a knotted portion, said second coupling including a tubular member having a bore, said knotted portion being in said bore and said bore having a portion with a diameter less than that of a section of said knotted portion.

59. (Original) The tissue connector assembly of claim 50 wherein said second coupling comprises an annular blade coupled to said second piercing member, said annular blade surrounding and being secured to a portion of said surgical fastener.

60. (Original) The tissue connector assembly of claim 36 wherein said surgical fastener comprises a surgical clip.

61. (Original) The tissue connector assembly of claim 60 wherein said surgical clip comprises a wire.

62. (Original) The tissue connector assembly of claim 61 further including a coil surrounding at least a portion of said wire and having confined ends.

63. (Original) The tissue connector of claim 61 wherein said wire comprises shape memory material.

64. (Original) The tissue connector assembly of claim 60 wherein said surgical clip has an open configuration and a closed configuration.

65. (Original) The tissue connector assembly of claim 64 wherein said surgical clip is in said closed configuration when in a relaxed state.

66. (Original) The tissue connector assembly of claim 64 wherein said surgical clip is generally U-shaped when in said open configuration.

67. (Original) The tissue connector assembly of claim 64 wherein said surgical clip assumes a spiral configuration when in said closed configuration.

68. (Original) A tissue connector assembly comprising two needles, a surgical clip and a flexible member having a portion releaseably coupled to said surgical clip and a portion coupled to one of said needles, the other one of said needles being coupled to said surgical clip.

69. (Original) The tissue connector assembly of claim 68 further comprising a second flexible member having a portion releaseably coupled to said surgical clip and a portion coupled to said other one of said needles.

70. (Original) Tissue connector apparatus comprising a wire, a tissue piercing member, a generally tubular member having first and second end portions and surrounding said wire and a coupling, said piercing member being coupled to said coupling and said coupling including members having portions that have a radially outward bias and extend within said tubular member second end portion, said tubular member second end portion being releasably constrained.

71. (Original) The apparatus of claim 70 wherein said generally tubular member is a coil.

72. (Original) Tissue connector apparatus comprising a surgical fastener, a tissue piercing member, a flexible member, a coupling, and a coil, said flexible member having a portion coupled to said piercing member and a portion coupled to said coupling, said coil surrounding said surgical fastener and being compressed against said coupling, said coupling including a first member fixedly secured to said fastener and a second member slidably coupled to said fastener, and said flexible member being positioned between said coupling members, and said coil surrounding said surgical fastener and having one end releaseably constrained and the other end compressed against said slidably coupled member.

73. (Original) Tissue connector apparatus comprising a surgical fastener, tissue piercing member and a coupling said fastener including a groove and projection and said coupling including a member having a groove and projection and a sleeve slidably mounted thereon, said fastener

groove and projection being configured to mate with said coupling member groove and projection.

74. (Original) Tissue connector apparatus comprising a surgical fastener, a tissue piercing member, a flexible member having a portion coupled to said tissue piercing member and a knotted portion, and a tubular member having a bore, said fastener being coupled to said tubular member and said knotted portion being in said bore, said bore having a portion with a diameter less than that of a section of said knotted portion.

75. (Original) Tissue connector apparatus comprising a surgical fastener, an annular blade and a tissue piercing member, said tissue piercing member being coupled to said annular blade, and said annular blade surrounding and being secured to a portion of said surgical fastener.

2. (previously presented) The system of claim 7 wherein said support device comprises a tube having a plurality of slots forming said spaces.

4. (previously presented) The system of claim 7 further including a plurality of graft piercing members, each graft piercing member extending from one of said plurality of arms and adapted to pierce and hold a portion of said first tubular structure.

7. (currently amended) A system for anastomosing a first tubular structure to a second tubular structure having an opening formed therein, the system comprising:

a support device having a proximal portion and a distal portion and a member, said distal portion comprising a plurality of arms annularly arranged, each having a proximal end coupled to said proximal portion and a distal end, said plurality of arms being arranged to form a space between adjacent arms where said space extends to the distal end of said adjacent arms such that the distal ends of adjacent arms are separated, said arms further being arranged to form a surface configured to support an everted portion of said first tubular structure thereover, said member configured to move the distal ends of said arms radially inward and radially outward;

a plurality of fasteners adapted to pass through the spaces formed between adjacent arms and the first and second tubular structures;

wherein the first tubular structure can be everted over the arms of said support device, the support device passed through the opening in the second tubular structure, the distal ends of said arms moved radially outward, and the fasteners passed through the spaces and tubular structures to anastomose the first tubular structure to the second tubular structure;

wherein said fasteners comprise clips.

8. (previously presented) The system of claim 7 wherein said fasteners comprise self-closing surgical clips.

10. (previously presented) The system of claim 13 wherein said support device has a longitudinal axis and said graft piercing members extend parallel to said longitudinal axis.

11. (previously presented) The system of claim 13 wherein said support device is tubular.

13. (currently amended) A system for anastomosing a first tubular structure to a second tubular structure having an opening formed therein, the system comprising:

a support device having a member and a plurality of arms annularly arranged to form a space between adjacent arms, said arms being configured to support said first tubular structure, said member configured to move distal ends of said arms radially inward and radially outward;

a plurality of graft piercing members, each graft piercing member extending from one of said plurality of arms and adapted to pierce and hold a portion of said first tubular structure;

a plurality of fasteners adapted to pass through said spaces and the first and second tubular structures; and

wherein the first tubular structure can be everted over the support device, the support device passed through the opening in the second tubular structure, the distal ends of said arms moved radially outward, and the fasteners passed through the spaces and tubular structures to anastomose the first and second structures;

wherein said fasteners comprise surgical clips.

14. (previously presented) The system of claim 13 wherein said fasteners comprise self-closing surgical clips.

41. (new) The system of claim 4 wherein each graft piercing member is slidably coupled to one of said plurality of arms.

**THIS CLAIM SET IS NOT AN AMENDMENT
FOR ENTRY IN THIS CASE**

Response to Requirement for Information in Application 10/653,027
Pending Claims from Application No. 10/340,164
Atty. Docket No. P21914.02

42. (new) The system of claim 13 wherein each graft piercing member is slidably coupled to one of said plurality of arms.

Response to Requirement for Information in Application 10/653,027
Pending Claims from Application No. 10/340,161
Atty. Docket No. 21914.01

1.(Withdrawn)A method of anastomosing a first tubular structure having an end portion to a second tubular structure having an opening formed therein, where at least one of the structures is tissue, the method comprising: providing a support device including a plurality of arms having a proximal end, a distal end, and a plurality of piercing members extending therefrom; advancing the piercing members from the arms and through the first tubular structure to secure the first tubular structure to the plurality of piercing members; positioning the support device so that the tubular structures contact one another; passing a plurality of surgical fasteners between selected arms of the support device and through the tubular structures to secure the tubular structures together; and removing the support device from the tubular structures.

2.(Withdrawn)The method of claim 1 wherein the support member is positioned to form a seal between the tubular structures in the region adjacent the opening in the second tubular structure.

3.(Withdrawn)The method of claim 1 wherein the end portion of the first tubular structure is everted over the distal ends of the arms and the support device is positioned to form a seal between at least a portion of the everted portion of the first and second tubular structures in the vicinity of the opening.

4.(Withdrawn)The method of claim 1 wherein a portion of the support device is introduced through the opening in the second tubular structure and positioned therein.

5.(Withdrawn)The method of claim 1 wherein passing surgical fasteners between selected arms and the tubular structures comprises passing sutures between selected arms and the tubular structures to secure the structures together.

6.(Withdrawn)The method of claim 1 wherein passing surgical fasteners between selected arms and through the tubular structures comprises passing surgical clips between selected arms and through the tubular structures to secure the structures together.

7.(Withdrawn)The method of claim 1 wherein passing surgical fasteners between selected arms and through the tubular structures comprises passing self-closing surgical clips between selected arms and through the tubular structures to secure the structures together.

8.(Withdrawn)The method of claim 1 further including piercing the second tubular structure with the piercing members to secure the second tubular structure to the first tubular structure before passing fasteners between selected arms and through the tubular structures.

9.(Withdrawn)The method of claim 8 wherein the piercing members are retracted from the tubular structures before removing the support device from the tubular structures.

10.(Withdrawn) The method of claim 1 including moving the arms radially inward and introducing the distal ends of the support device arms into the opening in the second tubular structure.

11.(Withdrawn) The method of claim 10 including radially expanding the support device arms after introducing the distal ends of the arms into the opening in the second tubular structure.

12.(Withdrawn) The method of claim 1 wherein positioning the distal ends of the support device arms includes introducing the distal ends of the arms into the opening in the second

tubular structure and radially expanding the arms from a first state to a second state so that a portion of the first tubular structure is forced against the region of the second tubular structure that surrounds the opening.

13.(Withdrawn) The method of claim 12 wherein the support device arms are returned to the first state before removing the support device from the tubular structures.

14.(Currently Amended) Anastomosis apparatus for anastomosing a first tubular structure to a second tubular structure having a sidewall with an opening formed therein, the apparatus comprising a support device having a first portion and a second portion adapted to support an everted portion of the first tubular structure and having a radius and radially adjustable portions, each having a length and a transverse dimension, said second portion further including a plurality of piercing members, each slidably coupled to one of said radially adjustable portions so that it is slidably moveable along the length thereof and adapted to pierce and hold a portion of said first and second tubular structures, wherein each of said piercing members forms a sharpened tip opposite a base and is arranged relative to a corresponding one of said radially adjustable portions such that in a first state said piercing member is within said radially adjustable portion and said sharpened tip is distal said base.

15.(Original) The apparatus of claim 14 wherein said radially adjustable portions comprise a plurality of arms, each of said piercing members being slidably coupled to one of said plurality of arms.

16.(Original) The apparatus of claim 15 wherein said arms have a range of positions.

17.(Original) The apparatus of claim 16 wherein said range includes a first position, where said arms diverge in a direction away from said support device first portion, and a second position,

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where said arms tend to move toward union in a direction away from said first portion, and positions between said first and second positions.

18.(Original) The apparatus of claim 17 further including a slide slidably coupled to said plurality of arms for movement therealong and having a radial dimension sized to radially expand said arms when moved away from said first portion of said support device.

19.(Original) The apparatus of claim 16 wherein said first portion comprises a generally ring shaped member and said arms extend radially from said generally ring shaped member and are slidably mounted thereto.

20.(Original) The apparatus of claim 15 wherein said arms are tubular.

21.(Previously Presented) The apparatus of claim 15 further including one or more actuators coupled to said piercing members for moving said piercing members.

22.(Previously Presented) The apparatus of claim 14 further including an actuator coupled to one of said piercing members for moving said piercing member.

23.(Original) The apparatus of claim 22 wherein said radially adjustable portions comprise a plurality of arms, each of said piercing members being slidably coupled to one of said plurality of arms.

24.(Original) The apparatus of claim 23 wherein each of said piercing members has a portion with a curved memory shape.

25.(Original) The apparatus of claim 24 further including a plurality of fasteners, each of said fasteners being coupled to one of said piercing members.

26.(Original) The apparatus of claim 24 further including a plurality of fasteners, each of said fasteners being releasably coupled to one of said piercing members.

27.(Original) The apparatus of claim 23 further including a plurality of fasteners, each of said fasteners being coupled to one of said piercing members.

28.(Original) The apparatus of claim 23 wherein each of said fasteners is releasably coupled to one of said piercing members.

29.(Original) The apparatus of claim 28 wherein said fasteners comprise surgical clips.

30.(Original) The apparatus of claim 28 wherein said fasteners comprise self-closing surgical clips.

31.(Original) The apparatus of any one of claims 21, 22, 23, 25, 26, 27, 28, 29, or 30 wherein said piercing members are releasably coupled to said actuator.

32.(Original) The apparatus of claim 23 wherein each of said piercing members has a closed loop memory shape.

33.(Original) Anastomosis apparatus for anastomosing a first tubular structure to a second tubular structure having a sidewall with an opening formed therein, the apparatus comprising a support having a body portion, a plurality of arms extending from said body portion, and a plurality of tissue piercing members each being adapted to pierce a portion of said first and second tubular structures, each of said plurality of arms forming a pathway in which one of said plurality of tissue piercing members is slidably mounted, each of said plurality of arms further having a distal end from which one of said tissue piercing members can be extended and a

proximal end, said distal ends collectively adapted to receive an end portion of said first tubular structure everted thereover.

34.(Original) The apparatus of claim 33 wherein the position of said arms is adjustable.

35.(Original) The apparatus of claim 34 wherein the position of said arms is adjustable from a first position, where said arms diverge in a direction away from said body portion, to a second position, where said arms tend to move toward union in a direction away from said body portion.

36.(Original) The apparatus of claim 35 further including a slide slidably coupled to said plurality of arms for movement therealong and having a radial dimension sized to radially expand said arms when moved away from said body portion.

37.(Original) The apparatus of claim 34 wherein said body portion comprises a generally ring shaped member and said arms extend radially from said generally ring shaped member and are slidably mounted thereto.

38.(Original) The apparatus of claim 33 wherein said arms are tubular.

39.(Previously Presented) The apparatus of claim 38 further including one or more actuators coupled to said piercing members for moving said piercing members.

40.(Previously Presented) The apparatus of claim 33 further including one or more actuators coupled to said piercing members for moving said piercing members.

41.(Original) The apparatus of claim 40 wherein each of said piercing members has a portion with a curved memory shape.

42.(Original) The apparatus of claim 40 wherein said piercing members have a loop configured memory shape.

43.(Original) The apparatus of claim 40 further including a plurality of fasteners, each of said fasteners being coupled to one of said piercing members.

44.(Original) The apparatus of claim 43 wherein each of said fasteners is releasably coupled to one of said piercing members.

45.(Original) The apparatus of claim 44 wherein each of said piercing members has a portion with a curved memory shape.

46.(Original) The apparatus of claim 45 wherein said piercing member portions have a curved memory shape.

47.(Original) The apparatus of claim 45 wherein said fasteners comprise surgical clips.

48.(Original) The apparatus of claim 45 wherein said fasteners comprise self-closing surgical clips.

49.(Original) The apparatus of any one of claims 41, 42, 43, 44, 45, 46, 47, or 48 wherein said piercing members are releasably coupled to said support device.

50.(Original) The apparatus of claim 33 wherein each of said piercing members has a portion with a curved memory shape.

51.(Previously Presented) The apparatus of claim 50 wherein each of said piercing members has a closed loop memory shape.

52.(Previously Presented) The apparatus of claim 20 wherein each piercing member is slidably mounted in one of said tubular arms.

53.(Previously Presented) The apparatus of claim 33 wherein said distal ends of said plurality of arms are uncovered.

54.(Previously Presented) The apparatus of claim 38 wherein each piercing member is slidably mounted in one of said tubular arms.

55.(Previously Presented) Anastomosis apparatus for anastomosing a first tubular structure to a second tubular structure having a sidewall with an opening formed therein, the apparatus comprising a support device having a first portion and a second portion adapted to support an everted portion of the first tubular structure and having a radius and radially adjustable portions, each having a distal end portion and a proximal end portion, said second portion further including a plurality of piercing members slidably coupled to said radially adjustable portions and adapted to pierce and hold a portion of said first and second tubular structures, each of said piercing members having a distal end and a proximal end, each piercing member distal end being extendable from one of said distal end portions of said radially adjustable portions without extending said proximal end from said distal end portion of said radially adjustable portion.

56.(Currently Amended) Anastomosis apparatus for anastomosing a first tubular structure to a second tubular structure having a sidewall with an opening formed therein, the apparatus comprising a support device having a first portion and a second portion adapted to support an everted portion of the first tubular structure and having a radius and radially adjustable portions transitionable from a distally tapering collective diameter, said second portion further including a plurality piercing members slidably coupled thereto and adapted to pierce and hold a portion of said first and second tubular structures, further including one or more pusher members connected

to said piercing members and arranged to slidably move said piercing members along said radially adjustable portions.

57.(New) Anastomosis apparatus for anastomosing a first tubular structure to a second tubular structure having a sidewall with an opening formed therein, the apparatus comprising a support device having a first portion and a second portion adapted to support an everted portion of the first tubular structure and having a radius and radially adjustable portions, each having a length and a transverse dimension, said second portion further including a plurality of piercing members, each slidably coupled to one of said radially adjustable portions so that it is slidably moveable along the length thereof and adapted to pierce and hold a portion of said first and second tubular structures, said apparatus further comprising a plurality of surgical clips connected to respective ones of said piercing members.

1. (Previously presented) A tissue connector assembly comprising a self-closing clip movable between an open configuration and a closed configuration, said clip having a generally U-shaped configuration when in said open configuration, and a mechanical restraining device coupled to said clip for restraining said clip in said open configuration, wherein said clip assumes a spiral configuration in said closed configuration.
2. (Original) The tissue connector assembly of claim 1 further comprising a needle releasably attached to said clip.
3. (Original) The tissue connector assembly of claim 1 wherein at least a portion of said mechanical restraining device remains on said clip when said needle is released from said clip.
4. (Original) The tissue connector assembly of claim 1 wherein said clip comprises a wire.
5. (Original) The tissue connector assembly of claim 4 wherein said wire is tubular.
6. (Original) The tissue connector assembly of claim 4 wherein said wire has a generally circular cross-section.
7. (Original) The tissue connector assembly of claim 4 wherein said wire comprises shape memory material.
8. (Original) The tissue connector assembly of claim 4 wherein said wire has a first end portion, a second end portion and an elongated member therebetween, said first end portion being coupled to said mechanical restraining device, said second end portion having a cross-sectional area greater than a cross-sectional area of said elongated member.

9. (Original) The tissue connector assembly of claim 1 wherein said clip is in a relaxed state when in said closed configuration.

10. (Canceled)

11. (Original) The tissue connector assembly of claim 1 wherein said mechanical restraining device comprises a coil surrounding at least a portion of said clip.

12. (Original) The tissue connector assembly of claim 11 wherein said coil comprises a plurality of adjacent loops, said coil being compressible with said plurality of adjacent loops being spaced closer to one another along one side of said coil than along an opposite side of said coil.

13. (Original) The tissue connector assembly of claim 11 wherein said mechanical restraining device includes a lock releasably engaging said coil, wherein engagement of said lock with said coil biases said clip in said open configuration.

14. (Original) The tissue connector assembly of claim 1 wherein said clip comprises a tubular wire and said mechanical restraining device comprises an elongated member positioned in said wire.

15. (Currently amended) A tissue connector assembly comprising a self-closing clip [[adapted to assume]] having an open configuration and a closed configuration and a coil coupled to said clip, wherein said coil is adapted to provide a biasing force to bias said clip in said open configuration.

16. (Original) The tissue connector assembly of claim 15 further comprising a needle coupled to said clip.

17. (Original) The tissue connector assembly of claim 16 wherein said needle is releasably coupled to said clip.
18. (Original) The tissue connector assembly of claim 15 wherein said clip has a generally U-shaped configuration when in said open configuration.
19. (Previously presented) A tissue connector assembly comprising a clip having an open configuration and a closed configuration and a restraint coupled to said clip when in said open configuration, wherein said clip assumes a spiral configuration in said closed configuration.
20. (Original) The tissue connector assembly of claim 19, wherein said restraint comprises an elongated member insertable into said clip.
21. (Original) The tissue connector assembly of claim 19 further comprising a needle coupled to said clip.
22. (Original) The tissue connector assembly of claim 21 wherein said needle is releasably coupled to said clip.
23. (Original) The tissue connector assembly of claim 19 wherein said clip has a generally U-shaped configuration when in said open configuration.
24. (Original) A tissue connector assembly comprising a clip movable between an open configuration and a closed configuration, said clip having a spiral shaped configuration when in said closed configuration, and an open configuration in which said clip is configured to form less than a full 360 degree turn.
25. (Original) The tissue connector assembly of claim 24 wherein said clip spirals around a central longitudinal axis when in said closed configuration, said clip having a generally conical shape along said longitudinal axis.

26. (Original) The tissue connector assembly of claim 25 wherein said clip has an inner end and an outer end, said inner end having a smaller radius than said outer end, said inner end being coupled to a needle.

27. (Original) The tissue connector assembly of claim 24 wherein said clip has a generally U-shaped configuration when in said open configuration.

28. (Original) The tissue connector assembly of claim 24 further comprising a needle releasably attached to said clip.

29. (Original) A tissue connector assembly comprising: a surgical clip having a relaxed state; a needle; a connector releasably coupling said needle to said clip; and a biasing member associated with said surgical clip; wherein said connector, when coupling said needle to said clip, urges said biasing member to bias said clip away from said relaxed state.

30. (Original) The tissue connector assembly of claim 29, wherein said connector comprises a portion forming a recess, and said clip comprises a portion which adapted to mate with said recess.

31. (Original) The tissue connector assembly of claim 30, wherein said biasing member comprises a coil surrounding at least a portion of said clip, said coil including a first end restrained from movement in one direction along said clip, and a second movable end, wherein said coupling of said connector with said needle compresses said coil by movement of said second end.

32. (Original) A tissue connector assembly comprising a needle, a clip, and a locking device releasably connecting said needle to said clip, said locking device being movable between an open position for insertion and removal of said needle and a closed position for coupling said needle to said clip and biasing said clip in an open configuration.

33. (Original) The tissue connector assembly of claim 32 wherein said clip comprises a wire.

34. (Original) The tissue connector assembly of claim 33 wherein said wire comprises shape memory material.

35. (Original) The tissue connector assembly of claim 32 further comprising a spring for biasing said clip in said open configuration.

36. (Original) A method for connecting multiple portions of material, at least one of which comprises tissue, comprising: inserting a clip, which is biased away from a closed configuration to an open configuration, through said multiple portions of material, at least one of which comprises tissue; mechanically maintaining said clip in said open configuration while inserting said clip through said materials; and allowing said clip to return to said closed configuration and secure a portion of said material therein.

37. (Original) The method of claim 36 including maintaining said clip in said open configuration with a locking device.

38. (Original) The method of claim 36 wherein said clip is allowed to return to said closed configuration by disengaging said locking device.

39. (Original) The method of claim 38 wherein said clip includes a needle coupled to said locking device and said locking device is disengaged by decoupling said needle from said locking device.

40. (Original) The method of claim 36 further comprising spring biasing said clip to said open configuration.

41. (Original) The method of claim 36 wherein said clip is inserted through a layer of tissue and a layer of graft material.
42. (Original) A method for connecting multiple portions of material, at least one of which comprises tissue, said method comprising: inserting a needle having a clip attached thereto through said multiple portions with a needle holder; and removing said needle from said clip with said needle holder.
43. (Original) The method of claim 42 wherein said removing said needle includes removing a locking device holding said clip in an open position.
44. (Original) The method of claim 43 wherein said removing a locking device comprises applying an inwardly directed radial force to said locking device.
45. (Original) The method of claim 43 wherein said removing a locking device comprises uncompressing a coil biasing said clip in said open position.

2. (currently amended) The surgical fastener of claim + 15, wherein said coil is integrally mounted to said clip element and is adapted to remain integral with said clip element in said closed configuration.
4. (currently amended) The surgical fastener of claim + 15, wherein said clip element comprises a wire having a shape memory which defines said closed configuration, said closed configuration being substantially spiral-shaped.
5. (original) The surgical fastener of claim 4, wherein said wire comprises Nitinol.
7. (currently amended) The surgical fastener of claim + 10, wherein said coil comprises Nitinol.
8. (currently amended) A The surgical fastener of claim 1, wherein said coil comprises comprising a shaped clip element movable between an open configuration and a closed configuration, and a shaped double coil surrounding at least a portion of said clip element and movable between said open configuration and said closed configuration, each of said clip element and said coil being shaped to assume said closed configuration when in a free state.
9. (original) The surgical fastener of claim 8, wherein said double coil comprises Nitinol.
10. (currently amended) A The surgical fastener of claim 1, wherein said coil comprises comprising a shaped clip element movable between an open configuration and a closed configuration, and a shaped coil comprising more than two wires, the shaped coil surrounding at least a portion of said clip element and movable between said open configuration and said closed configuration, each of said clip element and said coil being shaped to assume said closed configuration when in a free state.
11. (currently amended) The surgical fastener of claim + 15, wherein said coil has a shape memory which substantially conforms to said closed configuration.

12. (original) The surgical fastener of claim 11, wherein said closed configuration is substantially spiral-shaped.
13. (original) The surgical fastener of claim 11, wherein said coil comprises Nitinol.
15. (currently amended) ~~A The surgical fastener of claim 14, further comprising:~~
a shaped clip element movable between an open configuration and a closed configuration;
a shaped coil surrounding at least a portion of said clip element and movable between
said open configuration and said closed configuration, each of said clip element and said coil
being shaped to assume said closed configuration when in a free state;
two restraints on said clip element, said coil extending between said two restraints in said
closed configuration; and
a release mechanism adapted to engage said clip element at at least one of said restraints and to bias said coil to force said clip element into said open configuration.
30. (previously presented) A method of making a surgical fastener, comprising:
forming a clip element, formed of a shape memory material, into a predetermined closed configuration;
positioning a coil over at least a portion of extension of said clip element;
setting said clip element and said coil into said predetermined closed configuration to form a fastener comprising said clip element and said coil wherein each has a memory configuration which is said predetermined closed configuration.
31. (previously presented) The method of claim 30, further comprising: after said forming said clip element, setting said clip element by heating said clip element at a predetermined temperature for a predetermined time.
32. (previously presented) The method of claim 31, wherein said heating comprises heating at a temperature ranging from about 450° C. to less than about 500° C., and said predetermined time comprises a range from about one to twenty minutes.

33. (previously presented) The method of claim 32, wherein said heating comprises heating at about 475" C and said predetermined time comprises about six minutes.
34. (previously presented) The method of claim 30, wherein said setting said clip element and said coil comprises heating said clip element and said coil in a salt bath at a predetermined temperature for a predetermined time.
35. (previously presented) The method of claim 34, wherein said heating comprises heating at about 500" C-530" C. and said predetermined time comprises about one to six minutes.
36. (previously presented) The method of claim 35, wherein said heating comprises heating at about 515" C. and said predetermined time comprises about two minutes.
37. (previously presented) The method of claim 30, further comprising: integrally attaching said coil to said clip element to form said fastener.
38. (previously presented) The method of claim 30, further comprising: prior to said positioning said coil over said clip element, forming said coil in a straight axial configuration by winding said coil around a mandrel; and setting said coil in said straight axial configuration by heating said coil and said mandrel at a predetermined temperature for a predetermined time.
39. (previously presented) The method of claim 38, wherein said heating comprises heating at a temperature ranging from about 450" C. to less than about 500" C., and said predetermined time comprises a range from about one to twenty minutes.
40. (previously presented) The method of claim 39, wherein said heating comprises heating at about 475" C. and said predetermined time comprises about six minutes.

41. (previously presented) The method of claim 38, wherein said coil comprises a double coil formed by wrapping two wires side by side around said mandrel.
42. (previously presented) The method of claim 38, wherein said coil is formed by wrapping more than two wires side by side around said mandrel.
43. (previously presented) The method of claim 41, comprising using Nitinol wires to form said double coil.
44. (previously presented) The method of claim 30, wherein said step of setting said clip element and said coil comprises setting said clip element and said coil at the same time.
45. (previously presented) The method of claim 30, wherein said step of setting said clip element and said coil comprises setting said clip element prior to setting said coil.
46. (previously presented) The method of claim 45, wherein said step of setting said coil also comprises secondarily setting said clip element along with said coil.

30. (previously presented) A method for connecting portions of material, at least one portion comprising tissue, the method comprising:

drawing multiple portions of material, at least one of which comprises tissue, together with a tissue connector assembly having a clip in an open position; and closing said clip and securing said material portions therein.

31. (previously presented) The method of claim 30 wherein said materials are drawn together by pulling said tissue connector assembly.

32. (previously presented) The method of claim 31 wherein said tissue connector assembly is pulled with at least a portion of said tissue connector assembly positioned in said portions of material.

33. (previously presented) The method of claim 31 wherein said tissue connector assembly is pulled with at least a portion of said clip positioned in one of said portions of material.

34. (previously presented) The method of claim 30 including inserting a flexible member coupled to said clip through said portions of material, and at least one end of said tissue connector assembly is pulled to draw said materials together.

35. (previously presented) The method of claim 34 wherein said clip is pulled to draw said materials together.

36. (previously presented) The method of claim 30 wherein said tissue connector assembly is inserted into said multiple portions of material with a needle.

37. (previously presented) The method of claim 36 including simultaneously actuating closure of said clip and release of said needle therefrom.

**THIS CLAIM SET IS NOT AN AMENDMENT
FOR ENTRY IN THIS CASE**

Response to Requirement for Information in Application 10/653,027
Pending Claims from Application No. 10/439,973
Atty. Docket No. 21720.07

38. (previously presented) The method of claim 36 including manipulating a portion of said tissue connector assembly to both actuate closure of said clip and release said needle from said clip.

Claims 39-46 (canceled)